THE IDDR-SAF SUPPORT CENTERS AND CANTONMENTS

BY

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USAWC CLASS OF 2011

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by

Colonel Matthew Russell United States Army

Professor Raymond Millen Project Adviser

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This Strategic Research Paper (SRP) examines the requirements for standard Integrated Disarmament, Demobilization and Reintegration Support Areas and Facilities (IDDR-SAF) cantonment centers by donor nations and organizations (U.S. government, coalitions, United Nations, international organizations, non-government organizations, etc.). This SRP examines historical usage, present day requirements (if any/and if not, why not?), and the need for universal standards for DDR-SAF cantonment centers among the U.S. Military, UN, NATO, and Coalition partners. This SRP reviews DDR-SAF cantonment center requirements for counterinsurgency operations, full-spectrum questions, and humanitarian operations. On-going global U.S. military engagements demand adequate multi-national DDR-SAF cantonment center operations. This SRP explores the importance of these operations and specifics in some detail their need and proper operation.

THE IDDR-SAF SUPPORT CENTERS AND CANTONMENTS

As the strategic environment continues to grow more complex with expanding Globalization and interdependence, so too do the requirements of Stability Operations. Security Sector Reform, which is an essential component of Stability Operations, assists engaged countries reform their practice of safety, security, and justice. 1 By extension, the Disarmament, Demobilization, and Reintegration (DDR) program is a critical component of Security Sector Reform in that it assists a country disband warring factions after a civil war. DDR has proven to be extremely difficult to execute properly and fully. In the past, the UN, participating organizations, and contributing countries (hereafter called donors for short) have approached DDR in an ad hoc, exigent manner.² Thus, DDR personnel had to use, by force of circumstances, existing host nation infrastructure and facilities, which are generally substandard, dispersed, and insecure. Additionally, DDR cantonments, which are the camps that process former warring factions, are usually rudimentary and vary in quality. The UN Department of Peacekeeping Operations has recognized these shortfalls and stated the need for more standardized, organized and integrated DDR processes:

Although considerable experience has been acquired over these years the UN, [U.S., and other DDR donor nations] continued to lack a *common strategic framework* to carry out and support DDR programmes [and related support areas and facilities]. Each new DDR initiative had to be developed almost from scratch, relying mostly on the knowledge and experience of DDR programme staff, who often turned to the several reports, studies and works on DDR issues prepared by the UN, donor agencies, international and national non-governmental organizations (NGOs), and research institutes. However, guidance could be only inferred, was not always clear and often became difficult to translate into practice.

As a result, DDR was carried out in a fractured way; lacked adequate coordination among the UN peacekeeping mission, agencies,

programmes, and funds; and was compromised by poor planning and support. A consensus has therefore emerged among the UN and DDR stakeholders about the need to improve the Organization's performance in this area.³

In light of the UN's desire to improve the integration of DDR activities, this SRP proposes the adoption of standardized Disarmament, Demobilization and Reintegration support areas and facilities and cantonments. Accordingly, this study starts off by briefly examining the importance of DDR to Security Sector Reform, setting the conditions for state-building. Second, this examination highlights the complex nature of DDR and the important role of support areas and facilities, identified as DDR support centers and DDR cantonments for successful implementation of DDR. Lastly, this SRP discusses the proposed standardized camp designs for DDR support centers and DDR cantonments and describes technological innovations available for the quick construction of these facilities.

DDR support center and cantonment expeditionary packages provide donors with the means to implement DDR more effectively and efficiently. Liberated from their dependence on inadequate and desultory facilities, DDR support center and DDR cantonment expeditionary packages represent a fresh approach to assisting fragile states.

The Importance of DDR to Security Sector Reform

Disarmament, Demobilization, and Reintegration is integral to Security Sector Reform. It sets the conditions for SSR programs to get off on the right foot, so the planning and execution of DDR operations are of supreme importance. As part of the DDR process, donor and host nation planners estimate the size and scope of military, police, and other security structures needed by the host nation. In addition, reintegration

of former combatants back into their communities sets the foundation for, and determines the success of, long-term peace-building and development programs. DDR focuses on the immediate processing of former warring factions—both rebels and government forces—from war to peace. DDR sets the foundation for safeguarding and sustaining the communities where former combatants shall live as productive lawabiding citizens. DDR programs must be closely coordinated with SSR efforts to ensure an integrated approach that synchronizes activities that support a common endstate. ⁴

In his study on organizational approaches to international challenges, Raymond Millen from the Peace Keeping and Stability Operations Institute (PKSOI) considers Disarmament, Demobilization, and Reintegration as an essential component of SSR. In the aftermath of conflicts, DDR should be designed to facilitate the cessation of hostilities and the return to normalcy. Accordingly, DDR operations provide the ways and means for former warring factions to reach political reconciliation, demilitarize, and demobilize wartime force structures. DDR enables opportunities for former combatants to enter society once again. Millen observes that DDR activities permit the government and the rebels to move forward once they have drawn up a peace agreement. Because of their neutral status, DDR donors enjoy the trust of all parties, which enhances their legitimacy. But that legitimacy can be squandered if DDR is mismanaged. Thus, it is imperative that donors have the capability to deploy into the host nation rapidly, establish DDR support centers and DDR cantonments, to and launch coherent, coordinated DDR activities. Millen concludes that if DDR falters, progress in SSR is likely to stagnate.6

African analyst Margaret Culbert has reached the same conclusion, writing that SSR failures in Africa result in part from donor nations' failures to generate effective DDR programs. Consequently, host nations are unable to effect positive change, provide and create jobs, restore society, practice effective government, and vivify their overall economies. Culbert believes that DDR programs, locations, and facilities are essential for participating stakeholders and donor nations to implement and sustain successful DDR operations. Clearly, success in DDR improves the likelihood of a more effective and sustainable SSR. On the other hand, failure in DDR negatively impacts progress in SSR. Culbert contends the lack of SSR progress in Southern Sudan, Chad, and Uganda is due to inadequate DDR programs. Specifically, she estimates over 90,000 active and former combatants do not have access to DDR facilities. Ultimately, Culbert concludes the active and primary participation of the host nations in DDR and SSR is indispensable.⁷

In view of the diverse numbers of donors involved in DDR in addition to the necessity of involving both the host government and rebel forces in the process, DDR coordination and cooperation require a high degree of organization. In this regard, standardized support areas and facilities, along with cantonments for the processing of former warring factions are essential.

The Complex Nature of DDR and the Important Role of Support Areas and Facilities

In view of growing Globalization, interconnectivity, and economic interdependency, the international community is much more attuned and responsive to natural disasters, regional conflicts, and the plight of fragile states. Increasingly, great powers and regional states are viewing assistance as in their national interests or values. The United States, NATO, and the EU are increasingly joining the traditional

donors (UN and various assistance and development organizations) in DDR operations because they see the value in ending conflicts which contribute to regional instability and economic disruptions. Ironically though, the increase in the number of donors has exponentially increased the level of complexity, the probability of confusion, and the amount of waste. Many of these problems can be mitigated through a greater focus on organization. Specifically, developing standardized support areas and facilities and cantonments promises greater effectiveness and efficiencies.

Standardized support areas and facilities and cantonments can provide enormous benefits to DDR partners and the host nation. The need for greater organization is long overdue. According to Dean Piedmont, a DDR Program Specialist with the UN Development Program, cantonments are critical for the processing of government and rebel forces through DDR. Yet, host nations often will not or cannot establish proper cantonments for this purpose. Without properly located and orderly cantonments, the DDR process degenerates into haphazard and incomplete actions.⁸

Incidentally, the United Nations currently has the greatest experience in managing DDR operations. However, even after decades of administering DDR programs, it has yet to establish a standardized expeditionary capability for DDR missions not to mention SSR, Disaster Response, and Humanitarian Assistance. The UN DDR Operational Guide offers DDR practitioners and planners with extensive information on lessons learned, but it gives short shrift to organizing for DDR missions. In this regard adoption of a standardized design for support areas would aptly complement the UN DDR Operational Guide.

There is historical precedence for standardized centers and cantonments. The Romans perfected the use of expeditionary camps as their legions conquered new territory for the Roman Empire. Roman camps or castras, as they were called at the time, dotted the European landscape, symbolizing the reach and power for Rome. The legion made its home in these camps each night while on campaign or while stationed in one place. Roman camps served as garrisons for months and even years, with many eventually becoming permanent settlements and thereafter cities. Designed by Roman engineers for efficiency, camps served as temporary forts for the army on the move or as permanent frontier fortifications. What made these camps effective, efficient, and flexible for the needs of the legion was their standard design, which allowed for quick construction and distribution of work. Clearly, the use of camps not only provided the Romans with a means of defense, but also served the higher purpose of military administration, logistical support, and even governance.

Like the Romans who achieved greater organizational efficiency and effectiveness through castras, the UN could gain greater unity of purpose and synergy through standardized organizations. In view of the limited resources the UN experiences with DDR missions, efficiencies gained through improved organization can reduce the tendency to over-extend and exhaust DDR personnel as well as liberating donors from using the existing host nation infrastructure.

Some people may point out that provincial reconstruction teams, used in Iraq and Afghanistan, should be the adopted model. Although they were an innovative concept for assistance and reconstruction, provincial reconstruction teams lacked uniform design, garrison size, and mission statement among U.S. and coalition partners.

Accordingly, this lack of uniformity led to inequitable burden sharing and uneven performance. The Army appears not to have learned these lessons as LTG Robert Caslen, the former 25th Infantry Division Commander during operation Iraqi Freedom (OIF) in 2008-2009, and now the Army's Combined Arms Commander (CAC), has brought out. He concluded upon completion of his combat tour that our Army lacked the ability to properly capture timely and critical unit After Action Reviews (AARs). Critical information and lessons learned required to enhance and standardize how it conducts future operations in a kinetic and non-kinetic environment. This standardization of our preparation (training) and the execution of this preparation play a direct correlation to the U.S. ability to be effective in both a kinetic and non-kinetic (i.e., DDR) environment.

Standardization requirements for DDR can be met by two organizational designsone for support areas and facilities and one design for cantonments. Because
standardized support areas and facilities are applicable for a variety of missions in
addition to DDR (i.e., SSR and Disaster Response), for purposes of clarity and
differentiation, this study uses the terms DDR support centers and DDR cantonments.
There are two levels of DDR support centers—the national DDR support center, which
interacts with the host government on DDR issues at the highest level (e.g., peace
agreement, future security forces, rule of law reforms, etc.) and the ancillary DDR
support centers, which manage the DDR process in the cantonments. Both support
centers are identical in design, but differ in function. The national-level DDR support
center is beyond the scope of this paper, so it will address the ancillary DDR support
center only. DDR cantonments complement the activities of the ancillary DDR support
center.

The ancillary DDR support center, designed to hold approximately 750 personnel, is where UN, NGO, IGO and other donor staffs are able to consolidate, organize and establish mission command over a host-nation's DDR operations. The ancillary DDR support center provides the DDR staff with a safe location to facilitate activities. It serves as the Command and Control (C2) center for overseeing the daily operations of one or several cantonments. Most importantly, it serves as a base for DDR donor teams to sally to assigned DDR cantonments for DDR activities. For planning purposes, a minimum of two ancillary DDR support centers are needed—one for the government military forces and one for the rebel forces. Depending on the number of donors available and the number of DDR cantonments needed, more ancillary DDR support centers may be required.

Ideally, a DDR cantonment should accommodate approximately 2500 former combatants and serve as the primary location for administrating all DDR activities. The size and lay-out of this camp and the required capacity to support host nation DDR functions is discussed later in this paper. However, it is important to note that the host nation government and the rebel forces supply the labor for the construction and operation of the DDR cantonments rather than the donors. Under the supervision of donor engineers following a standardized design, host nation labor can construct cantonments rapidly.

DDR cantonments should not be confused with military internment facilities or reintegration centers which are designed to ensure the continuity of detainee programs. ¹² Rather cantonments are DDR processing centers and reintegration facilities whose functions cease once former combatants are integrated back into society,

leading to the dismantlement of the cantonments.¹³ Ancillary DDR support centers and DDR cantonments are designed to process and transition former combatants and rehabilitate them in a productive and progressive manner so they can return to society.

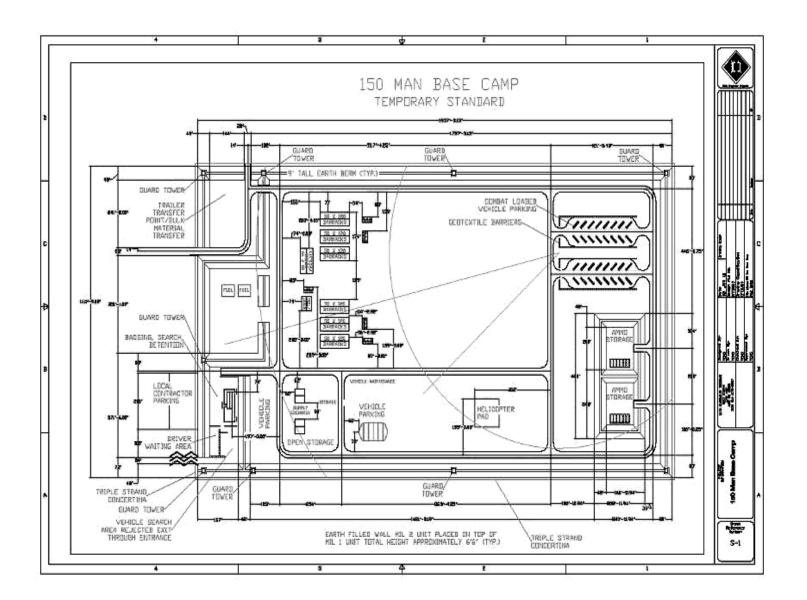
Aside from the benefits of greater organization, DDR missions require an expeditionary capability as well. According to the *UN DDR Operational Guide*, the majority of UN deployments require long lead and procurement times. These lead times unduly delay the ability of UN missions to begin DDR activities immediately. For Example, it may take from 60 to 120 days to procure prefabricated buildings, fuel bladders (6000 gallon), and mobile deployment telecom system (MDTS). This does not include mandatory times for the following: contractor review and bid cycle (45 day minimum); procurement time frame upon award of contract (30-60 days); procurement and shipment (30-60 days); and facility construction and or equipment arrival and set-up (60-120 days). Consequently, DDR support centers require an expeditionary capability to permit the rapid deployment of equipment and construction of camps and DDR cantonments.

Standardized Camp Designs for DDR Support Centers and DDR Cantonments

Standardization of DDR support centers would accelerate the construction of camps and initiation of programs at the earliest opportunity possible. DDR support centers should reflect the latest technology available for facilities. The material requirements for facilities must be flexible, interchangeable, transportable, durable, light weight, and reusable. Facilities must also be durable enough for years of use. A decade ago, no market existed for rapid deployable, quick erection, and cost-effective barriers and facilities. Fortunately, technological innovations in protective walls, barriers, and shelters have great potential for expeditionary capabilities.

Granted, the U.S. Army (Heavy Construction Engineers), Air Force (Red Horse Engineers), and Naval Engineers (SEABEES) have taken the lead in standardized camp design. Specifically, a standard 150-personnel camp design, which can be expanded to meet the needs of 1500 personnel, is already in use (Figure 1). This design is used as base construction of combat out posts or joint operating bases. Unfortunately, camp construction requires extensive time, material, equipment, and manpower. It may take weeks before the necessary material, manpower, and equipment is staged on site. Thenceforth, it may take over 70 additional days before a camp becomes partially operationally capable (POC), and another 45 days to bring a camp into a fully operationally capable (FOC) status. In addition, camp construction requires many specialized construction personnel, tools, and equipment. Such assets often compete with other essential commitments and service tasks in theater.

Consequently, it may take a minimum of six months before DDR support centers are available. The exigencies of DDR dictate a far faster donor response. So it is critically important to recognize and embrace current technology in lightweight rapidly installed force protection and rapidly emplaced re-locatable shelter designs for DDR activities. Fortunately for DDR donors, these materials are already being used by civilian and other military organizations.



Camp Base (1. U.S. Military 150 Personnel Standardized Figure '

For modern crisis response, DDR donor nations and organizations require readily deployable, rapidly erectable, secure, and standardized camp packages in order to execute DDR operations effectively and efficiently. Expeditionary camp packages must be tailored and prepared in advance for DDR support centers and DDR cantonments. Camp packages must be functional and deployable-to any geography and environment. Although the United States, UN, and other organizations conducting DDR operations have yet to embrace the latest technologies for barriers and shelters, once they do, it will revolutionize the way DDR is implemented. ¹⁶

The issue of barriers is illustrative. Security is a persistent necessity regardless of the threat environment. Often no security walls or barriers are available in current DDR operations. Nikolai Rogosaroff, UN director for policy and planning of DDR operations, affirms that all too often areas designated to receive DDR operations have little to no existing protective barriers to offer DDR donors, host nations, and former combatants. DDR operations are more successful when physical barriers, such as enclosed camps, walled city centers or sporting arenas, are available. These structures safeguard the user and provide the former combatant with a visible sense of security. ¹⁷

Until recently, availability of deployable, reliable, robust, resilient physical security capabilities has been a hit or miss affair. DDR donors are only afforded adequate physical security and protection in areas where suitable structures already exist.

Unfortunately, the required time, material, cost and logistical burden of constructing security walls out of brick, stone or wood in a remote area is tremendous. Fortunately, advances in rapid and reliable wall technology have provided a solution to this issue of physical security.¹⁸

To the casual observer a basic protective barrier device looks like a giant cardboard box without a top or bottom (Figure 2).¹⁹ It comes in various widths and heights, which offers flexibility to the user. The walls of the container units are made of a poise polypropylene geotextile fiber (skin) material, referred to and measured by the industry in millimeters (MIL). The larger the MIL number (MIL 2, 3 or 4), the thicker, stronger, and greater life span of the polypropylene material.

The MIL fiber is fastened to a galvanized steel rigid mesh. Each side of the steel mesh interlocks with other sides; this box-shaped design can be folded into a small package (like folding a sheet of paper) for storing and shipping.²⁰ This innovation in mobile and flexible barrier design has been successfully utilized in Bosnia, Kosovo, Iraq, Afghanistan and the humanitarian relief efforts in Haiti. For DDR support centers and DDR cantonments, the use of these barriers provides DDR practitioners with the flexibility and celerity to establish camps and cantonments even in remote areas.

A recent advance is the rapidly deployable protective barrier wall. Stored in a 20foot deployment container, this specially designed and engineered barrier system allows
for significant increases in the number of wall units that can be transported by air or sea,
emplaced in a matter of hours, and adapted to existing terrain. This system is designed
to reduce further the logistical burden of force protection, the time requirements of
emplacement, and the terrain constraints, all of which are ideal for DDR support
centers, cantonments, and military camps. (Figure 3).²¹



Figure 2. Basic Protective Barrier Device



Figure 3. Rapidly Deployable Protective Wall.

The other significant innovation is the quick-erection, modular shelters of various sizes and configurations. Now, a camp can be established in a matter of days and without constraints on design. For example, in Iraq, Afghanistan, and Haiti, the erectable assembly shelters have provided individual family dwellings, medical centers, command centers, food stores, community centers and schools. As an aside, functional, adequate, and available shelters are essential for executing responsive and effective Humanitarian Relief. In the aftermath of the earthquake in Haiti, no adequate shelters or facilities were available to establish medical, living, warehousing, or

reintegration operations.²⁴ Disaster Response alone illustrates the usefulness of such shelters in austere environments.

As DDR Program Specialist Dean Piedmont observed, Haiti (along with many other world-wide DDR locales) lacked security and available facilities from which to institute Disaster Response. All suitable structures in Haiti were destroyed in the earthquake. Initial relief equipment and shelter material commonly used by the UN and donor nations had to be imported. More exasperating, the vast majority of this equipment and shelter material was not designed nor suited to provide the capabilities needed on the ground. ²⁵ Fortunately, during this operation re-locatable shelter corporations were called upon and were able to begin providing shelters for thousands of displaced and homeless Haitians. These structures demonstrated their worth in Haiti; similar shelter systems have great potential for DDR operations.

For the proposed DDR support center and DDR cantonments, rapidly assembled shelters are easily adapted to camp designs and cantonments. Coincidentally, relocatable and rapidly assembled shelters have been the choice of military units for the past decade. These shelters come in a variety of shapes and sizes; they are most commonly available in 52 models ranging in size from 109 to1, 250 square feet. ²⁶ These shelters are fully customizable, and can be interconnected to increase or decrease an overall structure's footprint. Additionally, these shelters are offered in a line of specialty shelters - including entry control points, mobile hospital and hygiene facilities, living quarters, and office and administrative systems. Advanced technology makes these structures extremely durable (Figure 4).²⁷

Titanite, a common composite in most re-locatable rapidly emplaced shelters, comprises most of the shelter's frame. This aerospace composite metal with superior structural properties has been independently tested to be 270 percent stronger than aluminum. The fabric that covers the shelter's exterior is specially coated, making it fire retardant, mildew resistant, water repellent and highly resistant to abrasion and ultra violet rays.²⁸ These durable, well made, reusable shelters have an extensive period of use.



Figure 4. Rapidly Assembled Re-locatable Shelters

Another unique characteristic of the re-locatable shelter is the space age floor design. This flooring is made from an extremely lightweight composite plastic in three-by-three foot square sections. The flooring is two to four feet deep, depending on the required durability and type of facility. The flooring is designed with a cross pattern channel (with covered access plates), allowing for easy installation of electrical, phone, LAN or fiber optics (Figure 5).²⁹ These floors represent a great leap forward in terms of

wiring, permitting quick installation, repairs, and communications adjustments as shelter configurations change. No less important, personnel no longer need to worry about hanging cables from the ceiling or strewn across pathways.

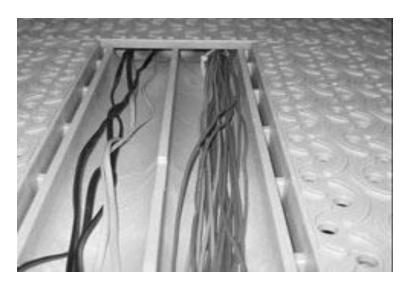


Figure 5. Basic Rapid Assembly Shelter (Re-locatable Shelter) Flooring

In aggregate, these advanced materials and systems provide donors with readily available protection and shelters for prompt initiation of DDR programs. Ancillary DDR support centers and DDR cantonments can safeguard both personnel and equipment instantaneously.³⁰ These barrier systems and materials alleviate the burden on security requirements, meaning fewer security forces are needed to protect the camp. In view of barrier strength and height, private security guards or police will be as effective as a military guard force for most threats. The need for security is ever present for even without a military threat, DDR personnel must be wary of theft, robbery, and mobs.³¹

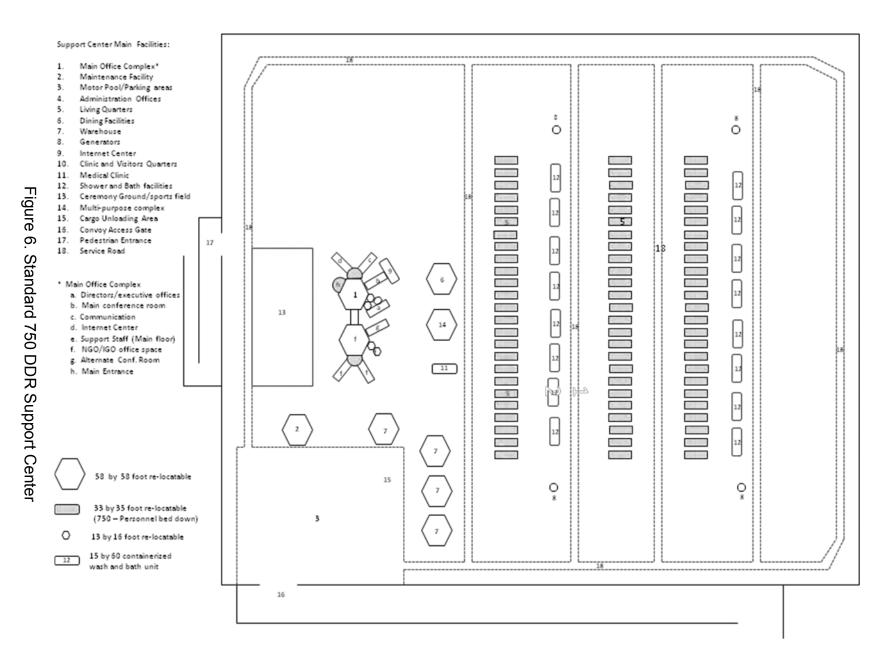
The ability to build self-contained and sufficient camps in almost any terrain liberates DDR donors from operating in and competing for accommodations and facilities in host nation cities. Additionally, ancillary DDR support centers and DDR cantonments can be built in mutually agreed areas which allow easy access for both

government and rebel forces, as well as DDR personnel. Building DDR cantonments for both government and rebel forces ensures equity of treatment for processing, thereby increasing trust in DDR. Consequently, staged in DDR support centers, DDR officials can supervise programs in cantonments for more effectively and efficiently than the past.

The standard design of DDR support centers and DDR cantonments must be adaptable and durable, permitting rapid emplacement with the fewest personnel and equipment possible. As noted by Raymond Millen, DDR processing is a complex process with many moving parts. Thus, there are several key facilities required by DDR support centers focused on the DDR activities. To function properly and carry out its mission successfully, the DDR support center requires facilities which permit DDR personnel to perform their duties and garrison facilities for camp operations and maintenance (Figure 6). 32

DDR Support Centers

shows the advantages of the modular shelter systems. Shelters of various sizes are configured into office spaces, conference rooms, and operations center to optimize staff work and traffic patterns. In general, office space for the support staff and DDR officials (mentors, trainers, military observers, liaison officers, etc.) is located in one or more large shelters (58 by 58 feet). Senior staff officers and principal donor officials each have office space in medium shelters (33 by 35 feet). The command group (director, deputy director, and secretary) have small shelters (13 by 16 feet). Balancing access to the headquarters complex with privacy, senior officials need some solitude so they may think and work with minimum interruption.



Two conference rooms (33 by 35 feet) provide the capability for multiple meetings, planning and coordination (simultaneously if necessary). In view of the criticality of communications for the headquarters, the communications and technical support section occupies a medium shelter (33 by 35 foot). The communication section supports the headquarters complex with audio visual devices, computers, digital and satellite connections, satellite phones, cell phones, cell booster equipment, Voice over IP (VOIP), teleconferencing, and video teleconferencing (VTC) connectivity. The section maintains all information technology equipment in the headquarters complex as well as the internet center. The proximity of the communications and technical support section mitigates the requirements for running excessive coaxial or fiber cable or wireless connections to this facility. Also integral to the headquarters is the communications center, which serves as the command and control on a 24-hour basis.

Camp Support Facilities. The support facilities are responsible for the maintenance and operations of the camp as well as managing security. Basically, any function which regulates the running of the camp falls under the support facilities. The camp is built with expansion in mind, so the garrison offices are responsible for land management.

Garrison administration offices, living and visitor quarters, dining facility, medical clinic, and dental clinic utilize medium shelters (33 by 35 feet). Because these shelters are the standard shelter for camp facilities, they are the most prevalent. These shelters can be configured and relocated in various ways as changes occur in density requirements for accommodations, bathrooms, showers, administration, medical, dental, visitor facilities. An added feature of the medical shelters is the air filtration and

over-pressure system which allows the donor medical staff to limit the spread of germs and infectious diseases. The community center comprises two large shelters (58 by 58 feet) and serves as a multi-functional facility. It provides additional support services for social events, religious activities, movies, and additional space for meetings.

The motor pool area and warehouses are located in close proximity to the vehicle entrance gate along the inside perimeter so as to keep heavy traffic from the interior of the camp. This restricts heavy vehicle and heavy lift equipment (HLE) from the interior portions of the DDR support center and DDR cantonments. The motor pool offices, maintenance bays and the warehouses utilize large shelters (58 by 58 feet). These structures allow large cargo vehicles to be brought inside for maintenance or off loading during inclement weather. Initially, warehouses must give first priority to stocking barriers, shelters, and other essentials for proposed DDR cantonments. In this regard, the headquarters staff must develop a comprehensive cantonment construction strategy to ensure cantonments are rapidly constructed so the DDR process can begin.

Sufficient space for additional warehouses is prudent in the event of a natural disaster.

Additional warehouses permit the rapid staging of relief items in case of need.

DDR Cantonments.

Similar to the construction of the DDR support center, the DDR cantonment must offer former combatants with adequate support and facilities in order to reintegrate them back into society properly and effectively. DDR cantonments also require a standardized design that can be quickly and easily erected and configured. Under the supervision of a few DDR camp engineers, former combatants can build their cantonments within days. Cantonment diagrams become essential so as to show the laborers the configuration of the camp and where the shelters are to be erected.

Aside from exploiting the available labor of former combatants, a key task in DDR is to focus former combatants on rehabilitation and not on continued aggression. Having former combatants build their own cantonment keeps them occupied and also instills a sense of ownership. With few exceptions, non-combatants should not build the camps because this undermines the first step in the process. This paper identifies the minimum key facilities for the cantonment in order for DDR processing to occur as efficiently and effectively as possible: weapons storage facility; weapons turn-in point for weapons earmarked for destruction; in-processing facility to determine the status of former combatants (e.g., war service, medical, personal data, etc.); barracks for single males; barracks for single females; barracks for families, segregated by whole, single parents, adolescent parents, and pregnancies; barracks for male child soldiers; facilities for female Lavatories; medical facility; school house; vocational and life skills training facility; workshops; multifunctional facility (e.g., worship, truth and reconciliation hearings, social events, etc.); dining facility; and a sports field which can double as ceremony parade ground (Figure 7).34 The following description of the facilities for processing illustrates the sheer complexity of DDR.

The weapons storage facility is constructed with rapidly emplaced protective barriers, providing a solid structure which can be secured with heavy doors and locks (Figure 2). In addition, the 9-foot protective walls (6' thick) provide blast protection from any unintended ordinance explosions from within the structure. A consideration for the DDR donor is the utilization of the ISU-90 container.

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Cantonment Center:

This system can provide additional security for a multitude of activities within the Cantonment Support Center to include, but not limited to: the storage of medical equipment, drugs and medicine to support the centers medical and dental clinic; sensitive items storage; storage of hand grenades and other small explosive devices; the storage of weapons magazines and small arms ammunition; and the storage of smaller caliber weapons such as pistols. The ISU-90 provides secure, clean, fire-resistant, and air-tight storage. Allowing the former combatant commander to store weapons properly and securely (separating weapons storage from ammunition storage) is a critical and key task for the DDR operator. This storage technique begins the process of building trust in the DDR process with the designated commander of government or rebel forces. In this sense, the local commander becomes the cantonment commandant, who is responsible for the camp and the former combatants. Allowing him to retain a set of keys to these storage facilities continues to build on that trust.³⁵

The weapons turn-in point is established near the weapons storage facility. The cantonment commandant must understand that this point is for weapons earmarked for destruction. This gives cantonment commandants the means to monitor the movement of weapons for turn-in and their destruction at one location. Storage requirements for weapons to be destroyed are the same as those which will be stored. The goal is to separate and secure weapons and ammunition from combatants as quickly as possible.

The growing collection of ammunition, grenades, explosives and weapons requires security to avoid the temptation of looting by those people not completely convinced or committed to cessation of conflict and the rehabilitation process. ISU-90s

provide secure storage for over a hundred weapons (per container) identified for destruction and avoids this temptation. These containers allow for the collection and instant —otuof sight and out of mind" temporarily storage for weapons prior to their destruction. In addition, the weapons remain secure during transport to the destruction point. It is important to keep in mind that at no time should DDR personnel engage in any cash-for-weapons programs as that may subvert the DDR process.³⁶

The in-processing facility is the primary location to determine and verify a former combatant's service, medical condition, and personal information. This facility is comprised of two 33 by 35 foot shelters. It is located near the entrance to the Cantonment and near the weapons storage facility. DDR personnel need to verify individual claims of service, including those who provided service support or are family members of soldiers. Digital photographs and eye retinal scans should be taken (when possible) to assist DDR personnel record and identify former combatants, child soldiers, family members, sex slaves, and women taken into forced marriages. This data base facilitates searching for and reuniting family members.

The in-processing center initiates efforts to relocate and reunite women of forced marriages, sex slaves, and child soldiers with family members, home of origin, or a location willing to except them. Women of forced marriages may or may not wish to remain with their spouses. Some women may be single and/or pregnant, requiring special care. Due to cultural or societal reasons, DDR personnel may find it difficult to former sex slaves or child soldiers to their original communities. Consequently DDR personnel may need to settle these victims with other relatives or villages.

The standardized design of the DDR cantonment addresses the need for some segregation of former combatants to take place. Segregation helps provide a sense of security and safety to some former combatants, such as families, single women, single pregnant women, former sex slaves and child soldiers. The camp design anticipates the need to create control measures among former combatants so as to lower sexual-related and predatory violence.

Special consideration must be made when planning facility requirements for children, child soldiers, and even the children of child soldiers. Reconciliation and criminal trials are central to any DDR program involving child soldiers. International DDR approaches must comply with the —Pniciples and Guidelines on Children Associated with Armed Forces or Armed Groups," also known as —The Paris Principles." The staff judge advocate is responsible for providing command guidance on any situations pertaining to child combatants.

Medical exams and the proper medical treatment facilities are essential to a successful DDR program. One of many attractions of the DDR processes for former combatants is the availability of medical care for soldiers and families. Initial medical exams during the in-processing phase are essential to identify expediently and accurately cases of sexually transmitted diseases, infectious and contagious illnesses, injuries, and handicaps.

In the initial DDR stages of in-processing additional barracks (for quarantine space) and additional medical personnel maybe needed. The standardized cantonment design allows the planner to expand medical space as required. Even after the cantonment standard design package has been delivered to the site and or erected. Re-

locatable structures from administration, barracks, or support facilities can be reallocated to augment the medical facility. For example, the standard medical facility may need additional wings (shelters) to accommodate a heavy flow of sick, injured, or quarantined exceeding the capacity of the standard medical facility design.

By referring to a standard design and shelter types, planners can calculate the additional square footage of floor and shelter required fro the medical facility. This additional requirement can be redirected from a lesser utilized portion of the camp, obviating the need for additional shelters. In addition, the re-locatable standard pattern flooring design allows planners to determine the additional linear feet needed to support the new facilities expansion. This information also enables planners and logisticians to calculate additional power demands, additional heating ventilation and cooling (HVAC), phone and power requirements.

Recent re-locatable shelter design technologies have manufactured a —redical facility in a can" concept. These re-locatable medical facilities packages provide the end user with one standardized medical treatment facility. This design concept comes complete with required shelters, flooring, lighting, heating ventilation and air conditioning (HVAC), generation equipment, beds, tables, chairs, etc. Dependent on the need, one or more re-locatable medical facilities can be utilized within the Cantonment Support Center.

Separate child and adult educational facilities highlight the necessity for education and a sign that normalcy has returned to the host country. Sequestering children for school as well as living accommodations helps break pernicious influences and control of adult soldiers over child soldiers. A separate educational facility provides

children with a safe, less stressful environment—one conducive to learning. Ideally, several re-locatable school facilities (31 by 33 feet) would accommodate different grades simultaneously. If this is not possible during the DDR process and the former soldiers wish to continue their education, it might be beneficial for a selected cantonment to remain and become an educational center for the country. Regardless, the educational facility comes with a centralized administrative area. This area can be utilized for class preparation by teachers, student processing (in and out), and serve as a location for shelving and storage containers for classroom material.

For most adult soldiers though, vocational training is more valued. The future of any nation attempting to recover from years of conflict is dependent on the amount and level of skilled labor available. Prior to, during, and in many cases long after a conflict ceases, much of the country's skilled workforce become expatriates, thereby creating a void. The vocational and life skills training facility (69 by 69 feet) and associated workshops will likely be the most popular among the adults since they are the key to a livelihood. DDR personnel must provide vocational training (e.g., farming, masonry, electrical, plumbing, mechanical, carpentry etc.) tailored to the economy, meaning it matches the resources available and fills a need. Life skill training is equally important. Common skills like shopping, cooking, household budgeting, and paying for things help former soldiers reintegrate into society.

The multifunctional facility (worship, truth and reconciliation hearings, social events center) should be, if at all possible, separate from the adult learning center.

Maintaining separate educational and multifunctional facilities lessens scheduling conflicts. The dining facility, comprising a series of structures (31 by 31 feet) is critical to

the success of DDR operations. The availability of food and water may be the enticement to keep reluctant soldiers in the DDR program. Run by the former soldiers, the dining facility reinforces basic life skills and vocational training: conducting inventories, ordering, shopping, menu preparation, nutrition, meal preparation, kitchen maintenance, personal hygiene (combating the spread of germs), basic sanitation and food ³⁹

Every cantonment must have an all purpose field or sports field. If possible a separate smaller field (or motor pool area) should be designated (lined off) as an available activities area (field) for children. Separate fields help to lessen contact between adult and children soldiers. However, when possible the children should utilize the primary field just as much as the adults. Having a secondary area (field) lessens scheduling conflicts between the two groups. This secondary field should be located closer to the children's school.

Conclusions

There exists a fundamental key link between DDR and Security Sector Reform (SSR), the need for support areas and facilities, and the requirements for standardized designs for the construction of DDR support centers and DDR cantonments. Successful DDR programs facilitate the execution of effective SSR. However, neither can be implemented nor be effective without a holistic foundation or standardized cantonment. There is a vital need for standardized DDR support center and cantonment designs. As described in the paper, without DDR support center and DDR cantonment standardization, the implementation of the DDR process is at risk. The DDR donor community needs to adapt and utilize new technological advancements when planning, executing and constructing DDR support centers and DDR cantonments. The United

States, UN and other DDR donor nations/organizations should capitalize on available innovative technologies such as protective barriers and re-locatable structures. These innovations should be incorporated into current and future DDR support center and cantonment design packages. The use of new innovative technologies make DDR support centers rapidly deployable into any theater, area of operation, or area devastated by natural or humanitarian disaster. Standardized construction designs enable DDR donor and host nation staffs to administer DDR programs more effectively and efficiently throughout the world.

Recommendations

- Adoption of standardized DDR support center and DDR cantonment designs.
- DDR Donor nations begin and continue to purchase modern barrier, relocatable shelters, and flooring technologies.
- Inclusion of support center and cantonment standardized packages located at donor nation pre-positioned stock centers or U.S. military Program Objective Memorandum sites (POM).

As the United States and the International Community have become increasing involved in SSR (including DDR), Humanitarian Assistance, and Disaster Response, it is high time that they organize for the efforts with standardized camp designs and provide them with the latest equipment to enhance their effectiveness and efficiency. As demonstrated by the horrific earthquake (9.0 on the Richter scale) and subsequent tsunami which struck the island of Japan in 2011, even modern industrialized societies would benefit from rapidly available and emplaced standardized support centers and

Cantonments. Shelters which can provide protection from extreme weather, sustain life, and enable a society to transition to a normalized existence.

Endnotes

- ¹ Department of the Army, Stability Operations: FM 3-07 (GPO: October 2008), 6-1.
- ² Donors are all those nations and organizations (i.e., single governments, coalitions, United Nations, international organizations, non-government organizations, etc.) engaged in assistance activities such as SSR, DDR, Humanitarian Assistance, and Disaster Response. The term -donor" is an arbitrary but apt comprehensive term.
- ³ United Nations, Operational Guide to the integrated disarmament, demobilization and reintegration standards (IDDRS), United Nations (UN): 2006, 13-14.
 - ⁴ Department of the Army, Stability Operations: FM 3-07 (GPO: October 2008), 6-19.
- ⁵ During the course of writing this paper my SRP advisor Professor Millen and I exchanged many ideas over long conversations concerning the topic of IDDR programs and processes, and his monogram; Government Assistance Centers: The Next Generation of Provincial Reconstruction Teams. Both of us have firsthand experience with PRT operations and camp designs and functioning, and are both passionate in their enhancement and development. Millen, Raymond. 2011. *Government Assistance Center: The next Generation of Provincial Reconstruction Teams* (Carlisle: PKSOI, to be published),14; See also Department of the Army, Stability Operations: FM 3-07 (GPO: October 2008), 6-19.

⁶ Ibid, 14.

⁷ Mrs. Margret Culbert is the Senior Defense Intelligence Analyst for the African Security Environment, Defense Intelligence Agency (DIA). Mrs. Culbert provided a lecture to the United States Army War College (USAWC), class of 2011 during its African Regional Symposium week (31 Jan – 4 Feb). Her topic of discussion; *The Security Environment in Africa*. 31 January 2011.

⁸ Dean Piedmont, phone and email interview by the author, Carlisle, Pennsylvania, 19 January 2011. Mr. Piedmont is a DDR Program Specialist, UN Development Program, and Bureau for Crisis Prevention and Recovery.

⁹ Roman camp construction was a critical task for legions as they moved across the vast empire maintaining order, good governance and establishing many temporary villages. Many of these later camps (villages) often became the bases for the development of permanent Roman cities. Http://www.jaysromenhistory.com/romeweb/romary/art3.htm (Accessed 11 December 2010); Roman camp construction played in important role in civilizing vast portions of the Roman Empire. It was a contributing factor to the development of European cities. Http://www.principialegionis.org/org/armycamps.html; http://en.wikipedia.org/widi/Castra (Accessed 16 December, 2010).

¹⁰ LTG Robert Caslen, 25th Infantry Division Commander (L), After Action Review (AAR) Lecture and briefing with officers and senior non commissioned officers, 25th ID, and attached

and assigned units of Task Force Lighting during combat operations in the Country of Iraq, Rotation 08-09, Schofield Barracks, Hawaii, 24 June 2009.

- ¹¹ Millen, Raymond. 2011. *Government Assistance Center: The next Generation of Provincial Reconstruction Teams* (Carlisle: PKSOI, to be published), 5.
 - ¹² Department of the Army, Stability Operations: FM 3-07 (GPO: October 2008), 6-21.
 - ¹³ Ibid.
- ¹⁴ United Nations, Operational Guide to the integrated disarmament, demobilization and reintegration standards (IDDRS), (UN: 2006), 89.
- ¹⁵ 150 personnel base camp design drawn by the Technical Headquarters Section (THS), 18th Engineer Brigade (Theater Army), Heidelberg Germany, 12 December 2010. This is a standardized base camp design utilized and modified by the various service engineer units (Army, Navy and Air Force). Portions of this design can also be found in the U.S. Army Corps of Engineer Field Manual, FM 5-34.
- ¹⁶ Nikolai Rogosaroff, phone and email interview by the author, Carlisle, Pennsylvania, 20 January 2011. Mr. Nikolai Rogosaroff is the current Director for Policy and Planning for Integrated Disarmament, Demobilization and Reintegration Standards (IDDRS) at the United Nations (UN).
 - ¹⁷ Ibid.
- ¹⁸ This technology is available from several corporations: the Alaska Corporation from the U.S.; and the HESCO Bastion Company, a British firm from Leeds, UK. Both Alaska's and HESCO's rapid wall technology were originally developed to protect shorelines against erosion. They later gained international recognition in Operations Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF), as well as in humanitarian and civil operations across the globe. HESCO Bastion LTD 2010, Leeds, Yorkshire, UK Retrieved 18 January, 2011 the world wide web:http://www.hesco.com/prod_con.html;http://www.hesco.com/rhouse/home.html
- ¹⁹ Commercial systems are currently available, such as Deployable Rapid Assembly Shelters, http://www.drash.com/Multimedia/PrintableBrochures.aspx, accessed on 1 February 2011; rapid barrier erection systems, http://www.hesco.com/prod_con.html; http://www.hesco.com/rhouse/home.html, accessed on 1 February 2011.

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²⁰ Ibid.

²¹ Commercial systems are currently available, such as Deployable Rapid Assembly Shelters, http://www.drash.com/Multimedia/PrintableBrochures.aspx, accessed on 1 February 2011; rapid barrier erection systems, http://www.hesco.com/prod_con.html; http://www.hesco.com/rhouse/home.html, accessed on 20 December 2010.

²³ Ibid.

²⁴ Dean Piedmont, phone and email interview by the author, Carlisle, Pennsylvania, 19 January 2011. Mr. Piedmont is a DDR Program Specialist, UN Development Program, and Bureau for Crisis Prevention and Recovery.

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²⁶ The Deployable Rapid Assembly Shelter (DRASH) is a highly advanced flexible, relocatable shelter widely being utilized by the U.S. Military. DHS System LLC. Orangeburg, NY, 10962. Retrieved 12 December 2010, from the World Wide Web: http://www.drash.com/Multimedia/PrintableBrochures.aspx.

²⁷ Ibid.

²⁸ The Deployable Rapid Assembly Shelter (DRASH) is a highly advanced flexible, relocatable shelter widely being utilized by the U.S. Military. DHS System LLC. Orangeburg, NY, 10962. Retrieved 14 December 2010, from the World Wide Web: http://www.drash.com/Multimedia/PrintableBrochures.aspx.

²⁹ The Deployable Rapid Assembly Shelter (DRASH) is a highly advanced flexible, relocatable shelter widely being utilized by the U.S. Military. DHS System LLC. Orangeburg, NY, 10962. Retrieved 17 December 2010, from the World Wide Web: http://www.drash.com/Multimedia/PrintableBrochures.aspx.

³⁰ Millen, Raymond. 2011. *Government Assistance Center: The next Generation of Provincial Reconstruction Teams* (Carlisle: PKSOI, to be published), 5.

³¹ Ibid, 14.

³² Ibid, 8.

³³ There are three military contingents which support DDR operations. These three contingents include: Military Observers (MILOBs); military liaison staff from the various force protection units, which include armored, infantry, aviation, and engineering. Some of these units can provide logistics support, including specialists in explosive ordnance device (EOD) and weapons destruction; United Nations, *Operational Guide to the integrated disarmament, demobilization and reintegration standards (IDDRS)*, (UN: 2006), 171.

³⁴ Millen, Raymond. 2011. *Government Assistance Center: The next Generation of Provincial Reconstruction Teams* (Carlisle: PKSOI, to be published), 14.

³⁵ Ibid.

³⁶ Ibid, 22.

³⁷ Ibid, 22.

³⁸ Department of the Army, Stability Operations: FM 3-07 (GPO: October 2008), 6-19.

³⁹ Millen, Raymond. 2011. *Government Assistance Center: The next Generation of Provincial Reconstruction Teams* (Carlisle: PKSOI, to be published), 23.